REMARKS/ARGUMENTS

I. Amendments to the claims

Claims 50-63 are added. Claims 34-63 are pending with entry of this amendment.

II. Support for the amendments

Support for the amendments can be found throughout the specification and original claims. For example, support for the amendments to claims 50 and 57 can be found at e.g., page 7, line 15 (describing 80% parallel complementarity) and page 13, lines 30-32 (describing parallel complementary probes).

No new matter is added.

III. Rejections under 35 USC § 103

Claims 9-12, 21, 22, 24, 25, 34-36, and 38-41 were rejected under 35 USC § 103 over Gagnor *et al.* in view of Mullis *et al.* The Examiner argued that the claims then under examination differed from Gagnor *et al.* only in that Gagnor *et al.* did not teach a composition comprising a thermostable polymerase. The Examiner argued that Mullis *et al.* described reverse transcription. Therefore, the Examiner argued that one of skill in the art would have been motivated to amplify the nucleic acids of Gagnor *et al.* (i.e., nucleic acids comprising an mRNA and an oligonucleotide analog that is complementary or parallel complementary to the mRNA in the presence of a nuclease) using PCR as described by Mullis *et al.* Applicants respectfully traverse the rejection.

The pending claims recite either:

(1) a composition comprising a target and control nucleic acid comprising sequences that are parallel complementary and primers to amplify both the target and control nucleic acid (claims 34-49); or

(2) a composition comprising a target and control nucleic acid, primers to amplify both the target and control nucleic acid and a control and target probe, wherein the two probes have sequences that are parallel complementary (claims 50-68).

Whether or not those of skill in the art would have been motivated to combine the references cited, the combination of the references would not result in the claimed invention. Gagnor *et al.* is directed to using oligonucleotides to block nucleases. Gagnor *et al.* describes comparison of the effect of two different oligonucleotides, which are parallel complementary, on nuclease degradation of an RNA. Thus, Applicants assume that the Examiner believes the oligonucleotides, which come in parallel complementary versions, correspond to the target and control nucleic acids of claims 34-49. Gagnor *et al.* only use the oligonucleotides as gene control agents used to block transcription.

For purposes of argument, even if those of skill in the art were motivated to amplify something from Gagnor *et al.*, they would amplify the RNA as described in Gagnor *et al.* to see if the nuclease has been blocked by the oligonucleotide. This interpretation does not result in two nucleic acids (i.e., a target and a control nucleic acid) in a composition comprising primers to amplify or probes to detect each of the two nucleic acids. Thus, the cited art does not include all of the elements of the claims, e.g., target and control nucleic acids and primers or probes to amplify or detect each of the target and control nucleic acids.

If the Examiner's interpretation is correct, the oligonucleotide in Gagnor *et al.* is the "control" nucleic acids, because at least one of oligonucleotides in Gagnor *et al.* is parallel complementary to the RNA. Although the Examiner did not present a clear explanation on this issue, this interpretation would require amplification of the oligonucleotide itself if the reference included all of the elements of the claim. One of skill in the art would not have been motivated to amplify the oligonucleotide itself because the oligonucleotide are too short and its amplification would serve no purpose. Indeed, the α-oligonucleotides described in Gagnor *et al.* may hybridize to RNA, but there is no evidence that a polymerse would add nucleotides to their ends. Thus, not only does the combination of references fail to teach the invention claimed, even if those of skill were motivated to amplify the nucleic acids as the Examiner suggests (which those of skill were not), the combination would not work because of the materials used by Gagnor *et al.*

Finally, Applicants note that the claims comprise two separate amplifications in one composition: an amplification of the target nucleic acid and an amplification of a control nucleic

acid. Based on the cited art, those of skill in the art would not have been motivated to perform two amplifications where either the target and control nucleic acids themselves, or the probes that detect the control and target nucleic acids, had parallel complementary sequences.

In view of the above arguments, Applicants respectfully request withdrawal of the rejection.

The Examiner also rejected claims 13, 14, 27, 28, 30, 31-33, 42, and 44-49 as obvious over Gagnor *et al.* and Mullis *et al.* in view of Ahern *et al.* The Examiner cited Ahern as teaching the advantages of kits. Applicants respectfully traverse the rejection.

As described above, the combination of Gagnor *et al.* and Mullis *et al.* would not result in the claimed invention. The addition of the idea of kits alone, without significantly more, does not cure the deficiencies of the other references. Accordingly, Applicants respectfully request withdrawal of the rejection.

The Examiner rejected claims 9, 20 and 37 as obvious over Bolli *et al.* in view of Mullis *et al.* Applicants respectfully traverse the rejection.

The Examiner has not set forth a realistic motivation in the art to combine the cited references references and therefore has not set forth a *prima facie* rejection. According to the Examiner, those of skill in the art would have been motivated to combine the teachings of the references "for the advantages of producing large amounts of an existing nucleic acid ... or producing a sequence which is known to exist but is not completely specified." *See*, page 7 of the office action. The Bolli reference is directed to studying bicyclo-DNA (a DNA analog) binding properties. The Examiner has not even explained why those of skill in the art would be motivated to use bicyclo-DNA in an amplification of Mullis *et al.* Even if there were such a motivation, there was certainly no motivation to include parallel complementary nucleic acids in an amplification reaction. While Bolli *et al.* describe one experiment with parallel complementary bicycle-DNAs, the experiment is performed to show that the sequences do not hybridize. *See*, Bolli *et al.*, page 4668, right column. There is no clear reason why someone

would want to perform such an experiment in an amplification reaction. Absent a motivation, the claims cannot be obvious.

Moreover, the claimed invention is not merely performing an amplification reaction with two nucleic acids that are parallel complementary. The pending claims recite either:

(1) a composition comprising a target and control nucleic acid comprising sequences that are parallel complementary and primers to amplify both the target and control nucleic acid (claims 34-49); or

(2) a composition comprising a target and control nucleic acid, primers to amplify both the target and control nucleic acid and a control and target probe, wherein the two probes have sequences that are parallel complementary (claims 50-68).

Finally, Applicants note that the claims comprise two separate amplifications in one composition: an amplification of the target nucleic acid and an amplification of a control nucleic acid. Those of skill in the art would not have been motivated to perform two amplifications where either the target and control nucleic acids themselves, or the probes that detect the control and target nucleic acids, had parallel complementary sequences.

In view of the above arguments, Applicants respectfully request withdrawal of the rejection.

The Examiner also rejected claims 13, 26, and 43 as obvious over Bolli *et al.* and Mullis *et al.* in view of Ahern *et al.* The Examiner cited Ahern as teaching the advantages of kits. Applicants respectfully traverse the rejection.

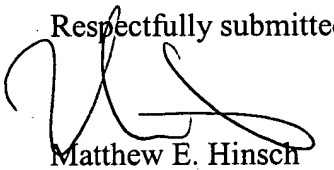
As described above, the combination of Bolli *et al.* and Mullis *et al.* would not result in the claimed invention. The addition of the idea of kits alone, without significantly more, does not cure the deficiencies of the other references. Accordingly, Applicants respectfully request withdrawal of the rejection.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-576-0200.

Respectfully submitted,



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